DOCUMENT RESUME

ED 143 740 UD 017 303

AUTHOR	Khan, Abdul
TITLE	Implications of Alternative Measures of Poverty on Title I of the Elementary and Secondary Education Act. The Measure of Poverty, Technical Paper XVI.
INSTITUTION	Department of Health, Education, and Welfare, Washington, D.C. Office of the Assistant Secretary for Planning and Evaluation.
PUB DATE	14 Feb 77
NOTE	45p.; For related documents see UD 016 918, 016 919, 016 920, 016 921, 016 922, 016 923, 016 924, 016 925, 016 926, 016 927, 016 928, 016 929, 017 087 ; Some tables may be marginally legible due to small print of the original document
AVAILABLE FROM	Office of the Assistant Secretary for Planning and Evaluation, Department of Health, Education, and Welfare, 200 Independence Avenue, S.W., Room 443D-South Portal Building, Washington, D.C. 20201
EDRS PRICE	MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS	*Definitions; *Measurement; *Measurement Instruments; *Measurement Techniques; Poverty Programs; *Poverty Research; *Statistical Data
IDENTIFIERS	*Elementary Secondary Education Act Title I; ESEA Title I

ABSTRACT

This paper provides a detailed analysis of the differential impact of alternative allocation procedures for Title I funds provided for under the Elementary and Secondary Education Act and including the impact on both selected states and all states of changing the poverty definition, the impact of updating the poverty count, the impact of changing the authorization formula, and the joint impact of changing the poverty definition and updating the poverty count. The methodology for updating the 1970 Census estimate of the number of poor children by providing current estimates for states and counties is also described. (Author/AM)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED143740

THE MEASURE OF POVERTY

Technical Paper XVI

Implications of Alternative Measures of Poverty on Title I of the Elementary and Secondary Education Act

By: Abdul Khan, Office of the Assistant Secretary for Education
Herman Miller, Consultant

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

UD017303

U.S. Department of Health, Education, and Welfare

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20201

February 14, 1977

Mary F. Berry
Assistant Secretary for Education Designate
Department of Health, Education,
and Welfare

Henry Aaron
Assistant Secretary for Planning
and Evaluation Designate
Department of Health, Education, and
and Welfare

I am pleased to forward Technical Paper XVI, "Implications of Alternative Measures of Poverty on Title I of the Elementary and Secondary Education Act." It contains supporting data for the report entitled The Measure of Poverty which was prepared in compliance with section 823 of the Education Amendments of 1974. The views presented are those of the individual authors and not those of the Task Force as a whole.

This paper provides a detailed analysis of the differential impact of alternative allocation procedures for Title I funds, including the impact on both selected states and all states of changing the poverty definition, the impact of updating the poverty count, the impact of changing the authorization formula, and the joint impact of changing the poverty definition and updating the poverty count. The methodology for updating the 1970 Census estimate of the number of poor children by providing current estimates for states and counties is also described.

Bette Mahoney

Bette Mahoney
Chairman
Poverty Studies Task Force

TABLE OF CONTENTS

	Page
FORWARDING LETTER	iii
PREFACE	vi
POVERTY STUDIES TASK FORCE	viii
TECHNICAL PAPERS	ix
TECHNICAL PAPER XVI - IMPLICATIONS OF ALTERNATIVE MEASURES OF POVERTY ON TITLE I OF THE ELEMENTARY AND SECONDARY EDUCATION ACT	1
AUTHORIZATION AND ALLOCATION OF FUNDS UNDER TITLE I	1
EXAMINATION OF THE IMPACT OF ALTERNATIVE ALLOCATION PROCEDURES	4
Impact on Selected States	5
Impact of Changing the Poverty Definition	9
Impact of Updating the Poverty Count	11
Impact of Changing the Authorization Formula	14
Joint Impact of Changing the Poverty Definition and Updating the Poverty Count	16
METHODOLOGY FOR PREPARING CURRENT ESTIMATES OF CHILDREN IN POVERTY FOR STATES AND COUNTIES	19
Census Bureau Estimates of Children in Poverty	22
READ Estimates of Children in Poverty by State	23
READ Estimates by County	28
HISTORICAL BACKGROUND FOR TITLE I AUTHORIZATION FORMULA	29
FOOTNOTES	34

LIST OF TABLES

		Page
Table 1.	Impact of Changes in the Allocation Formula on the Distribution of Title I Funds, 1975	6
Table 2.	Impact of Alternative Definitions of Poverty on Allocation of Title I Funds without Floor, 1975	7
Table 3.	Comparison of Title I Funds that Would be Received Using 125 Percent and 150 Percent of the Present Poverty Line with the Amount that Would be Currently Received	10
Table 4.	Comparison of Title I Funds that Would be Received Using a Single Poverty Line with the Amount that Would be Currently Received, 1975	12
Table 5.	Title I Funds to be Received by Each State in 1975 Using Current Allocation Formula and Alternative Estimates of Children in Poverty	13
Table 6.	Comparison of Title I Funds that Would be Received under Alternative Allocation Procedures with the Amount that Would be Currently Received	15
Table 7.	Title I Funds to be Received by Each State in 1975 Using the 1973 Count of Children in Poverty and a 25 Percent Increase in the Poverty Line	17
Table 8.	Comparison of Census and READ Estimates of Percentage of Children 5-17 Years Old in Poverty, by State, 1973	20
Table 9.	Comparison of Census and READ Estimates of the Number of Children 5-17 Years Old in Poverty, by State, 1973	21
Table 10.	Computation of the Number of Related Children Aged 5-17 per Impoverished Family: United States, 1974, by Size of Family	27
Table 11.	Number of Low Income Children under Original Grant Eligibility Standard, 1965-1972	31

PREFACE

Section 823 of the Education Amendments of 1974 (PL 93-380) requires a thorough study of the manner in which the relative measure of poverty for use in the financial assistance program, authorized by Title I of the Elementary and Secondary Education Act of 1965, may be more accurately and currently developed.

That financial assistance program is administered by the Commissioner of Education, through the Office of Education, Department of Health, Education, and Welfare. An important feature is the use of a formula prescribed by Section 103 of the Elementary and Secondary Education Act for the annual distribution of Federal funds to school districts. A significant factor in the formula is the number of school-aged children 5 to 17 in poor families within each school district. The measure of poverty which is used, and which is the subject of the study mandated by Section 823, is the Federal government's official statistical definition of poverty (also known as the Orshansky, OMB, Census Bureau, or Social Security poverty lines).

Other work related to poverty measurement has been called for in recent legislative acts. In the Comprehensive Employment and Training Act, the Secretary of Labor is directed to develop and maintain comprehensive household budget data at different levels of living, including a "level of adequacy." Any such review of the level of adequacy must necessarily be closely related to measures of poverty. The Housing and Community Development Act of 1974 gives the Secretary of HUD authority to adjust the poverty measure to reflect local variations in the cost of living. The Conference Report accompanying it directs the Secretary to develop or obtain data with respect to the "extent of poverty" by metropolitan areas and to submit such data to the Congress as part of a March 31, 1977, report.

Because of the broad scope of the subject matter, coverage of the study of the measure of poverty mandated by Section 823 of the Education Amendments of 1974 was extended to include implications of the study findings for the poverty-related programs of all affected Federal departments and agencies. The Title I program of the Elementary and Secondary Education Act was given the most detailed treatment to meet the legislatively-mandated specifications for the study as well as to serve as a primary example of application of the concepts of poverty measurement to Federal programs. The findings of the study are published in a report entitled, "The Measure of Poverty." An important objective of the study was full discussion and documentation of the major elements of currently applied and potentially usable poverty measures. Material containing essential supporting documentation for the study was assembled as technical papers. These have been written to stand alone as complete technical treatments of specific subjects.

The study was performed under the direct guidance of a Poverty Studies Task Force of the Subcommittee on the Education of the Disadvantaged and Minorities, Federal Interagency Committee on Education. Technical papers were prepared at the request of, under the direction of, and subject to review by the Task Force members. Some papers are primarily the work of one or two persons; these are attributed to their authors. Others result from the collective input of Task Force members or advisors and no specific attribution is given except to the Task Force, as a whole.

The following listings show members of the Poverty Studies Task Force by appropriate Federal departments and agencies, and the titles and authors of the technical papers.

This report contains Technical Paper XVI, Implications of Alternative Measures of Poverty on Title I of the Elementary and Secondary Education Act. It was prepared by Abdul Khan, of the Office of the Assistant Secretary for Education, Department of Health, Education, and Welfare, and Herman Miller, under contract to the Office.*

To obtain copies of the report, "The Measure of Poverty," or any of the technical papers, please write to:

Office of the Assistant Secretary for Planning and Evaluation
Department of Health, Education, and Welfare
200 Independence Avenue, S.W.
Room 443D - South Portal Building
Washington, D.C. 20201

* The authors gratefully acknowledge the assistance of Martin Frankel and Forrest Harrison, National Center for Education Statistics, Department of Health, Education, and Welfare, in the preparation of this report.

Federal Interagency Committee on Education
Subcommittee on Education for the Disadvantaged and Minorities

POVERTY STUDIES TASK FORCE

Chairman

Bette S. Mahoney
Office of the Assistant Secretary
for Planning and Evaluation
Department of Health, Education, and Welfare

Co-Chairman for Education

Abdul Khan
Office of the Assistant Secretary for Education
Department of Health, Education, and Welfare

David Arnaudo
Social and Rehabilitation Services
Department of Health, Education, and Welfare

Richard B. Clemmer
Office of the Assistant Secretary
for Policy Development and Research
Department of Housing and Urban Development

Genevieve O. Dane
Office of Education
Department of Health, Education, and Welfare

William Dorfman
National Center for Educational Statistics
Department of Health, Education, and Welfare

Alan L. Ginsburg
Office of the Assistant Secretary
for Planning and Evaluation
Department of Health, Education, and Welfare

George E. Hall
Social Statistics Branch
Office of Management and Budget

Stephen Hiemstra
Food and Nutrition Service
Department of Agriculture

Paul T. Hill
National Institute for Education
Department of Health, Education, and Welfare

Eva Jacobs
Bureau of Labor Statistics
Department of Labor

Jane Lampmann
Office of the Assistant Secretary
for Human Development
Department of Health, Education, and Welfare

Daniel Levine
Bureau of the Census
Department of Commerce

Nelson McClung
Office of Tax Analysis
Department of the Treasury

June O'Neill
Council of Economic Advisors

Mollie Orshansky
Social Security Administration
Department of Health, Education, and Welfare

Israel Putnam
Community Services Administration

Robert L. Rizek
Agricultural Research Service
Department of Agriculture

Gooloo Wunderlich
Office of the Assistant Secretary for Health
Department of Health, Education, and Welfare

Staff Director
George F. Grob
Office of the Assistant Secretary
for Planning and Evaluation

Julie Jervey Mitchell
Research Assistant
Office of the Assistant Secretary
for Planning and Evaluation

TECHNICAL PAPERS

I.	Documentation of Background Information and Rationale for Current Poverty Matrix	Mollie Orshansky Social Security Administration
II.	Administrative and Legislative Usages of the Terms "Poverty," "Low Income," and Other Related Terms	Poverty Studies Task Force with assistance from Ellen Kraus
III.	A Review of the Definition and Measurement of Poverty	Urban Systems Research and Engineering, Inc.
IV.	Bureau of Labor Statistics Family Budgets Program	Mark Sherwood Bureau of Labor Statistics
V.	The Consumer Price Index	Jill King Mathematica, Inc.
VI.	Wealth and the Accounting Period in the Measurement of Means	Nelson McClung and Eugene Steuerle Department of the Treasury
VII.	In-Kind Income and the Measurement of Poverty	Janice Peskin Health, Education, and Welfare
VIII.	The 1972-73 Consumer Expenditure Survey	Jill King Mathematica, Inc.
IX.	Inventory of Federal Data Bases Related to the Measurement of Poverty (a) Non-Census Data Bases (b) Census Data Bases	Connie Citro, Mathematica, Inc. Bureau of the Census
X.	Effect of Using a Poverty Definition Based on Household Income	Jack McNeil, Doug Sater, Arno Winard Bureau of the Census
XI.	Update of the Orshansky Index	Mollie Orshansky Social Security Administration
XII.	Food Plans for Poverty Measurement	Betty Peterkin Department of Agriculture
XIII.	Relative Poverty	Jack McNeil Bureau of the Census
XIV.	Relative Measure of Poverty	Stanley Stephenson Health, Education, and Welfare
XV.	Analytic Support for Cost-of-Living Differentials in the Poverty Thresholds	Thomas Carlin Department of Agriculture
XVI.	Implications of Alternative Measures of Poverty on Title I of the Elementary and Secondary Education Act	Abdul Khan and Herman Miller Health, Education, and Welfare
XVII.	The Sensitivity of the Incidence of Poverty to Different Measures of Income: School-Age Children and Families	Survey Research Center University of Michigan
XVIII.	Characteristics of Low-Income Populations Under Alternative Poverty Definitions	Lawrence Brown Health, Education, and Welfare

AUTHORIZATION AND ALLOCATION OF FUNDS UNDER TITLE I

Title I of the Elementary and Secondary Education Act of 1965 established the major program of Federal aid for elementary and secondary schools. It provides funds to local school authorities for the establishment of special programs to help educationally deprived children. The law requires that local school authorities assess the special needs of their educationally deprived children and that they design programs to meet those needs with Title I funds. The local authorities submit applications for funds which are reviewed by state educational agencies. Programs which are approved are then monitored and evaluated by the state agencies. Because of the emphasis on local response to individual needs, a great variety of programs are funded with Title I aid. Most of the assistance is concentrated on improving basic skills such as reading, writing, and arithmetic. School districts, however, also fund science and social science programs, cultural activities, and other programs designed to meet the health, psychological, and nutritional needs of educationally deprived children.

Annual appropriations under Title I increased from about $1.0 billion in 1966 to about $1.8 billion in 1974. About 6 million children were served by Title I programs in 1974, amounting to about $300 per child. This amount is small relative to the average expenditures per pupil, but it is significant in the poor school districts where expenditures per pupil tend to be quite low.

Under the present formula for the authorization of funds the eligible population is defined to include the following three groups: (1) children 5-17 in poor families as defined in the 1970 Census; 1/ (2) two-thirds of the children in families receiving AFDC payments which exceeded the poverty line; and (3) children residing in institutions for neglected and delinquent children and children in foster homes supported with public funds.

Actual payment, however, is not proportional to the eligible population. The payment rate is based on the minimum of 40 percent of 80 percent (i.e., about one-third) of the national average expenditure per pupil and the maximum of 40 percent of 120 percent (i.e., about one-half) of the national average. In addition, each county is guaranteed an allotment of at least 85 percent of the allotment received the preceding year, a provision referred to as the "hold harmless provision."

The following formulas describe the current authorization and allocation procedures:

Define as follows:

i : Subscript denoting state within U.S.

j : Subscript denoting county within state

ℓ : Subscript denoting number of ratable reduction

A_{ij} : Eligible AFDC population

B : Minimum administration allowance for a state

C_i : State agency contribution

D_i : Per pupil expenditure for state i used in authorization formula

E_{ij} : Total number of eligible children

F_c : County "floor" percentage

G_{ij} : Authorization for grant

L_{ij} : Previous year's allotment

N : Per pupil expenditure for nation

O_{ij} : Other eligible population

P_{ij} : Poverty population

Q_i : Per pupil expenditure for state

R_A : Ratio for eligible AFDC population

R_B : Ratio for administrative costs

R_O : Ratio for eligible other population

R_p : Ratio for poverty population

T : Total funding available

$U_{i\ell}$: Allocation for administration

V_i : Authorization for administration

W_ℓ : Reduction ratio for the nation

$K_{ij\ell}$: Share of funding

$Y_{ij\ell}$: Allocation for grants

by definition:

(1) $E_{ij} = R_P P_{ij} + R_A A_{ij} + R_o O_{ij}$

(2) $D_i = MED[.4(.8)N, .4Q_i, .4(1.2)N]$

(3) $G_{ij} = Max\ [F_c L_{ij}, E_{ij}\ D_i]$

(4) $V_i = Max\ [B, R_B(C_i + \Sigma_i G_{ij})]$

However, Title I has never been fully funded and therefore:

$E_i E_j G_{ij} + E_i V_i > T$

The following ratable reduction procedure is then followed:

First ratable reduction

$W_1 = T/(\Sigma_i \Sigma_j G_{ij} + \Sigma_i V_i)$

$X_{ij\ell} = W_1 G_{ij}$

$Y_{ij\ell} = Max\ [F_c L_{ij}\ X_{ij\ell}]$

$U_{i\ell} = Max\ [B, R_B(C_i + \Sigma_j Y_{ij\ell})]$

If $\Sigma_i \Sigma_j Y_{ij\ell} + \Sigma_i U_{il} - T > 0$

The ratable reduction continues as follows: second and subsequent ratable reductions

for $\ell = 2, 3, \text{————}, k$

$W_\ell = T/(\Sigma_i \Sigma_j Y_{ij\ell-1} + \Sigma_i V_{i\ell-1})$

$X_{ij\ell} = W_\ell Y_{ij\ell-1}$

$Y_{ij\ell} = Max\ [F_c L_{ij}, X_{ij\ell}]$

$U_{i\ell} = Max[B, R_B (C_i + \Sigma_j Y_{ij\ell}]$

This is repeated until on the kth iteration:

$\Sigma_i \Sigma_j Y_{ijk} + \Sigma_i U_{ik} - T = 0$

EXAMINATION OF THE IMPACT OF ALTERNATIVE AUTHORIZATION PROCEDURES

In 1974 Congress once again became concerned that Title I funds were not being "fairly" distributed. This concern is manifest in the mandate under PL 93-380 that an examination be made of the impact on the allocation of Title I funds of (1) a change in the poverty definition and (2) an updating of the 1970 Census estimate of the number of children in poverty.

An analysis of the impact of changing the poverty definition was carried out by calculating the allocation of $1.5 billion in Title I funds in 1975 under the 13 definitions of poverty defined in Chapter V of the report, the Measure of Poverty. (Data were from the one percent sample of the 1970 Census.) A concomitant change was made in the AFDC population above the poverty line to reflect the change in the level of the poverty definition. All 13 poverty concepts were tested, and five of them are discussed here in detail: the current measure, 125 and 150 percent of the current measure, a single poverty threshold based on half of the national median family income, and a single poverty threshold based on the poverty threshold for a nonfarm family of four. The results for most of the other poverty definitions fall somewhere within the range of the five presented here.

There is good reason to be concerned about distributing Title I funds in 1975 on the basis of the 1970 Census estimates of the number of poor children in each state. During the past few years the nation has suffered a recession which has undoubtedly affected some parts of the country more than others. The current allocation formula assumes that the distribution of poor children by state is the same today as it was in 1970, which is unlikely. To test this assumption, allocations based on the 1970 Census estimates were compared with the allocations based on estimates of the number of poor children by state for 1973, the most recent year for which such estimates could be made. Two estimates for 1973 were used: one by the Bureau of the Census and the other by the Regional Economic Analysis Division (READ) of the Department of Commerce. The methods used to prepare these estimates are described in the next section of this paper.

With the exception of 1973 READ estimates, alternative poverty populations are not available at the county level. Therefore, authorization and allocation procedures were performed at the state level. Although the results obtained from state allocations differ from the results obtained from county allocations, the state analysis gives good insight into the effects of using alternative poverty definitions.

In analyzing the impact of revised poverty definitions and of updating the count, the basic tabulations were performed assuming that the current allocation formula was unchanged. In order to identify separately the effects of various components of the formula, additional tabulations were made to explore the impact of: the hold harmless provision (the 85 percent floor); omitting the AFDC children; and

omitting the AFDC children and the current expenditures per pupil (CEPP) factor. The use of CEPP as a basis for allocating Title I funds is a very important element in the current formula. As noted above, the eligible population in each state is multiplied by 40 percent of CEPP in the state (with a minimum of about one-third of the national average and a maximum of about one-half of the national average) to arrive at the dollar entitlement for each state. A measure of the effect of CEPP can be obtained by comparing the amount each state would receive if funds were allocated only on the basis of the number of poor children, with the amount the state receives using both CEPP and the number of poor children. As will be noted subsequently, CEPP has a much greater influence on the allocation of Title I funds than any of the other factors in the present formula.

The results of the analysis of the impact on the Title I program of changing the definition of poverty, and taking into account the other factors just named, are presented in several stages:

- A sketch of the results based on five states representing differences in various regions and in size of population.
- A detailed analysis for all states of the impact of changing the definition of poverty.
- A detailed analysis for all states of the impact of updating the 1970 Census estimate of the number of poor children.
- An analysis of the impact of revising the allocation formula.
- An analysis of the joint impact of changing the poverty definition and simultaneously updating the 1970 Census count.

Impact on Selected States

Before turning to the detailed tables, it is useful to consider how changes in the definition of poverty or in the various components of the Title I formula might affect the allocation of funds in 1975. One large state, in terms of population, was selected for each region of the country (California, Illinois, New York, and North Carolina), and Mississippi was selected as a low-income southern state. An examination of the detailed figures for these five states provides a better understanding of the more comprehensive analysis, presented later in this section, of the results for all states. Table 1 shows the impact on the allocation of funds for these five states of changes in the formula, of updating the count of poor children, and of retaining or eliminating the hold harmless provision. Similar data are shown in Table 2 for the same states, measuring the impact of a change in the poverty definition.

Table 1. Impact of Changes in the Allocation Formula on the Distribution of Title I Funds, 1975 (Millions of Dollars)

State and Allocation Formula	Allocations without Floor		Allocations with Floor	
	1970 CIP a/	1973 CIP a/	1970 CIP a/	1973 CIP a/
New York:				
Current formula b/	$ 169.9	$ 194.4	$ 191.0 c/	$ 197.7
CEPP and poverty only	131.5	155.9	188.7	193.0
Poverty only	102.5	122.4	185.9	187.6
Illinois:				
Current formula b/	83.6	77.0	81.5 c/	74.5
CEPP and poverty only	72.9	63.9	72.8	69.2
Poverty only	58.9	52.0	67.8	66.8
California:				
Current formula b/	127.4	139.3	124.1 c/	133.9
CEPP and poverty only	122.2	135.3	117.1	126.3
Poverty only	116.0	129.4	110.7	118.8
North Carolina:				
Current formula b/	46.1	39.7	47.1 c/	45.1
CEPP and poverty only	52.0	45.3	49.4	46.2
Poverty only	60.9	53.4	53.5	48.8
Mississippi:				
Current formula	38.2	31.0	37.4 c/	33.4
CEPP and poverty only	43.6	35.7	40.5	35.0
Poverty only	51.0	42.0	44.5	37.7

SOURCE: Special tabulations prepared by the National Center for Education Statistics.

a/ CIP represents the number of children in poverty.
b/ The current formula includes CEPP, the number of children in AFDC families with incomes above the poverty line, and the number of children in poverty.
c/ Estimated actual allocation in 1975.

Table 2. Impact of Alternative Definitions of Poverty on Allocation of Title I funds without Floor, 1975 (Millions of Dollars)

State and Allocation Formula	Current Poverty Concept a/	125% of Current Poverty Line	150% of Current Poverty Line	Single Poverty Line	
				$4,795 b/	$3,748 c/
New York:					
Current formula d/	$ 173.3	$ 153.0	$ 143.1	$ 156.9	$ 188.6
CEPP and poverty only	136.4	138.1	137.6	137.0	136.9
Poverty only	106.3	108.3	108.5	107.1	106.9
Illinois:					
Current formula d/	82.4	76.4	75.1	76.5	93.1
CEPP and poverty only	71.9	72.7	74.3	71.4	75.2
Poverty only	55.0	59.0	60.7	57.9	60.8
California:					
Current formula d/	128.0	124.1	122.1	129.0	135.7
CEPP and poverty only	123.0	121.8	121.1	126.3	124.2
Poverty only	116.8	116.3	116.2	120.1	118.2
North Carolina:					
Current formula d/	44.3	46.1	45.2	46.8	38.8
CEPP and poverty only	49.9	48.3	46.0	49.9	47.3
Poverty only	58.4	56.8	54.4	58.5	55.4
Mississippi:					
Current formula d/	37.3	36.1	32.8	38.1	35.9
CEPP and poverty only	42.3	38.1	33.5	41.0	44.3
Poverty only	49.5	44.8	39.6	48.1	52.0

SOURCE: Special tabulations prepared by the National Center for Education Statistics.

a/ These figures differ from the corresponding figures in Table 1 because they are based on tabulations for states, whereas the data in Table 1 are based on county tabulations summarized to state levels.

b/ 50 percent of the U.S. median family income in 1969, as indicated by the 1970 Census.

c/ Weighted average poverty threshold for nonfarm four-person family in 1969.

d/ The current formula includes CEPP, the number of children in AFDC families with incomes above the poverty line, and the number of children in poverty.

In Tables 2-7 the hold harmless provision was not taken into account in allocating funds because this provision tends to minimize differences in allocations based on alternative poverty population and alternative Title I authorization formulas.

Column 3 of Table 1 indicates that, under the current formula, New York received $191.0 million in Title I funds in 1975. Using the same formula without the floor, New York would have received only $169.9 million (Column 1). Indeed, in 1975 the floor served to take a little away from most other states and give it to New York. Note that three of the other five states would have received slightly more funds without the floor than with it.

A comparison of Columns 1 and 2 of Table 1 shows the impact of updating the count of poor children. If the current formula had been used, but only the count of poor children updated, New York would have received $194.4 million rather than $169.9 million. This same change would increase the funds going to California, but it would have decreased the funds going to Illinois, North Carolina, and Mississippi. A more detailed examination of the data for all states will show that such a change would, in fact, increase the allocation to nearly all of the largest states, largely reflecting a redistribution of poor children among states during recent years.

An examination of Column 1, lines 1 through 3 of Table 1, for each state shows the impact of other changes in the formula on the Title I allotments.

Under the current formula, New York would have received $169.9 million, assuming no floor. If the AFDC population with incomes above the poverty line were excluded from the formula, the allocation of funds to New York would have dropped sharply to $131.5 million. If the funds were allotted only on the basis of the number of poor children, New York's allotment would again have been cut sharply to $102.5 million. Changes of a similar nature may be noted for Illinois and California. The picture is quite different, however, in North Carolina and Mississippi. These southern states would receive substantial increases in funds if the allocation were based entirely on the count of poor children. These differences largely reflect the higher expenditures per pupil in the larger states and their more generous AFDC payments.

Table 2 shows the impact of a change in the poverty measure on the allocation of Title I funds among the five states. Five different poverty concepts are considered. The current poverty concept, 125 percent and 150 percent of the current poverty line, a single poverty threshold based on one-half of the U.S. median family income in the 1970 Census ($4,795), and a single poverty threshold based on the poverty threshold for a nonfarm, four-person family in 1969 ($3,748). The two single poverty thresholds were selected to show the differential impact of vastly simplified poverty concepts selected at different points on the income distribution.

If the current formula is used, but the poverty line is increased by 125 percent or 150 percent, New York would have an appreciable reduction in funds. This is primarily because the influence of the AFDC add-on would disappear. The other four states, however, would not be as significantly affected. An examination of the figures for all states will show that most of them would not be appreciably affected by such a change in the poverty concept. More significant is the fact that a simplified poverty concept based on half the U.S. median family income, without adjustment for family size and composition or farm-nonfarm residence, would also not appreciably change the allocation of Title I funds among any of the states shown in Table 2 (except New York), nor, as we shall see later, would it appreciably change the amount of funds received by most states. In other words, we could achieve largely the same distribution of Title I funds we now have by using other poverty concepts.

A single poverty threshold selected somewhat lower on the income distribution (Column 5) of Table 2 would alter the allocation of funds appreciably, primarily because of its impact on the AFDC population. If the poverty threshold for a nonfarm family of four persons were used as the single poverty threshold for all families, New York would receive $188.6 million rather than $173.3 million. Illinois and California would also have substantial gains if such a change were made, whereas North Carolina and Mississippi would have slight reductions. The reason for these changes is that as the poverty line is lowered, more AFDC families are included in the eligible population. Such families are disproportionately located in the high-income northern states. It is especially significant that excluding the AFDC population from the formula (i.e., allotting funds on the basis of CEPP and poverty only) would not cause the amount of funds received by each sate (except Mississippi) to vary appreciably under any of the poverty definitions.

Impact of Changing the Poverty Definition

Table 3 shows, for each of the 50 states and the District of Columbia, a comparison of the Title I funds received under the current poverty concept with the funds that would be received if the poverty line were increased by 25 percent or 50 percent, and commensurate changes were made in the number of AFDC children above this new poverty line.

For purposes of analysis, four different groupings of states have been established, based on size of population: (a) the 12 largest states -- these states have over 5 million inhabitants and receive about 55 percent of the Title I funds; (b) 12 moderately large states -- these states have 3-5 million inhabitants and receive about 25 percent of the Title I funds; (c) 14 moderately small states -- these states have 1-3 million inhabitants and receive about 15 percent of the Title I funds; and (d) the 13 smallest states -- these states each have less than 1 million inhabitants and receive about 5 percent of the Title I funds.

Table 3. Comparison of Title I Funds that Would Be Received Using 125 Percent and 150 Percent of the Present Poverty Line with the Amount that Would Be Currently Received

(Millions of dollars; assumes a total allocation of $1.5 billion, without floor)

State	Current Definition (1)	Increase Poverty Line 125% (2)	Increase Poverty Line 150% (3)	Absolute Change (2-1)	Absolute Change (3-1)	Relative Change 2/1	Relative Change 3/1
12 Largest States							
California	$ 128.0	$ 124.1	$ 122.1	$ -3.9	$ -5.9	97%	95
New York	173.3	153.0	143.1	-20.3	-30.2	88	83
Pennsylvania	78.7	82.2	87.2	3.5	8.5	104	111
Texas	93.3	97.7	96.7	4.4	3.4	105	104
Illinois	82.4	76.4	75.1	-6.0	-7.3	93	91
Ohio	48.5	53.4	58.1	4.9	9.6	110	120
Michigan	61.8	56.2	55.2	-5.6	-6.6	91	89
New Jersey	44.2	42.7	41.5	-1.5	-2.7	96	94
Florida	48.7	50.2	50.6	1.5	1.9	103	104
Massachusetts	30.3	29.4	29.9	-0.9	-0.4	97	99
Indiana	19.5	23.4	26.5	3.9	7.0	120	135
North Carolina	44.3	46.1	45.2	1.8	0.9	104	102
12 Moderately Large States							
Missouri	28.2	29.9	32.0	1.7	3.8	106	114
Virginia	34.4	37.1	36.6	2.7	2.2	108	107
Georgia	44.4	44.7	43.4	0.3	-1.0	100	98
Wisconsin	24.6	26.4	28.5	1.8	3.9	107	116
Tennessee	36.1	36.6	36.5	0.5	0.4	101	101
Maryland	25.2	26.8	27.8	1.6	2.6	107	111
Minnesota	24.0	24.9	27.8	0.9	3.8	104	116
Louisiana	48.5	47.1	44.7	-1.4	-3.8	97	92
Alabama	40.8	39.7	37.6	-1.1	-3.2	97	92
Washington	17.7	17.3	17.9	-0.4	0.2	98	101
Kentucky	30.0	31.3	30.4	1.3	0.4	103	100
Connecticut	12.9	13.1	13.4	0.2	0.5	102	104
14 Moderately Small States							
Iowa	13.8	15.4	18.0	1.6	4.2	112	131
South Carolina	31.0	30.9	28.7	0.1	-2.3	100	92
Oklahoma	17.7	18.7	18.7	1.0	1.0	106	107
Kansas	12.6	13.4	14.3	0.8	1.7	106	113
Mississippi	37.3	36.1	32.8	-1.2	-4.5	97	88
Colorado	14.3	14.3	14.9	-	0.6	100	105
Oregon	13.6	13.3	14.4	-0.3	0.8	98	106
Arkansas	23.1	23.1	21.9	-	-1.2	100	95
Arizona	13.1	13.7	13.9	0.6	0.8	104	106
West Virginia	16.4	16.8	16.9	0.4	0.5	103	103
Nebraska	8.9	10.0	10.7	1.1	1.8	112	120
Utah	5.0	5.6	6.3	0.6	1.3	112	126
New Mexico	12.7	12.8	12.2	0.1	-0.5	101	97
Maine	5.5	6.6	7.3	1.1	1.8	120	133
13 Smallest States							
Rhode Island	6.4	6.4	6.1	-	-0.3	100	95
Hawaii	5.0	5.1	4.9	0.1	-0.1	102	98
New Hampshire	2.8	3.5	3.5	0.7	0.7	124	124
Idaho	3.5	4.0	4.4	0.5	0.9	113	124
Montana	4.5	5.6	6.0	1.1	1.5	124	134
South Dakota	5.0	5.7	6.0	0.7	1.0	112	119
North Dakota	4.5	4.7	5.0	0.2	0.5	102	110
Delaware	4.2	4.9	4.9	0.7	0.7	117	117
Nevada	1.9	2.3	2.5	0.4	0.6	118	133
Vermont	2.9	3.1	3.5	0.2	0.6	106	120
Wyoming	1.8	2.3	2.6	0.5	0.8	126	143
Alaska	2.3	2.5	2.5	0.2	0.2	108	106
Washington, D.C.	9.8	9.4	8.9	-0.4	-0.9	96	90

SOURCE: Special tabulations prepared by the National Center for Education Statistics.

A 25 percent increase in the poverty line would produce a sharp reduction in the funds going to several of the largest states and, with a few exceptions, would redistribute these funds to the rest of the country. The big losers would nearly all be the 12 largest states which include New York, with a cut of $20 million or 12 percent; Illinois (-$6 million or 7 percent); Michigan (-$6 million or 9 percent); California (-$4 million or 3 percent); and New Jersey (-$2 million or 4 percent). Three other states (Louisiana, Alabama, and Mississippi) would have losses of $1 million while most of the other states would receive slight to moderate gains.

With few exceptions, the pattern described above would prevail if the poverty line were raised by 50 percent. In most cases the changes resulting from a 50 percent increase are in the same direction, but larger than those resulting from a 25 percent increase.

Table 4 shows for each state the change in the allocation of funds if the poverty concept were based on two different single thresholds: one-half the U.S. median family income in 1969 ($4,795) and the poverty threshold for a nonfarm family of four persons in 1969 ($3,748). If the higher threshold were used, the results would be very similar to those obtained using the current concept. The allocations to only seven states would differ by more than 10 percent of the present allocation, and most of these differences would be in the smaller states, representing relatively small amounts of money. If the lower threshold were used, most of the largest states would have gains in funds, largely at the expense of southern states. Included among the heavy losers would be Texas, Florida, North Carolina, Missouri, Virginia, Georgia, Tennessee, Louisiana, Alabama, Kentucky, South Carolina, and Mississippi. The reason for this change, as previously explained, is that the lower poverty line would include more of the AFDC children among the eligible population under the Title I allocation formula. Most of these children live in the large northern states.

Impact of Updating the Poverty Count

Table 5 shows the amount of Title I funds each state would receive in 1975 with no change in the authorization formula, with a replacement of the 1970 Census estimate of the number of school-aged children in poverty with the census estimate for 1973, and with a replacement of the 1970 Census estimate with the estimate for 1973 prepared by the Regional Economic Analyses Division (READ). The first three columns of this table show the funds, in millions of dollars each state would receive, assuming a total allocation of $1.5 billion. Column 4 shows the ratio between the amount received using the READ estimate of poor children in 1973 and that received under the current formula; column 5 replaces the READ estimate with the census estimate for 1973.

These data show that the substitution of current estimates of children in poverty for the 1970 Census estimates, with few exceptions, transfers funds from the smaller rural states to the larger industrial states.

Table 4. Comparison of Title I Funds that Would Be Received Using a Single Poverty Line with the Amount that Would Be Currently Received, 1975

(Million of dollars; assumes a total allocation of $1.5 billion without floor)

State	Current Definition (1)	Single Poverty Line $4,795 a/ (2)	Single Poverty Line $3,748 b/ (3)	Difference (2-1)	Difference (3-1)	Ratio 2/1	Ratio 3/1
12 Largest States							
California	$ 128.0	$ 129.0	$ 135.7	$ 1.0	$ 7.7	101%	106%
New York	173.3	156.9	188.6	-16.4	15.3	91	109
Pennsylvania	78.7	77.5	80.0	-1.2	1.3	99	102
Texas	93.3	93.5	80.3	.2	-13.0	100	86
Illinois	82.4	76.5	93.1	-5.9	10.7	93	112
Ohio	48.5	52.0	49.7	3.5	1.2	107	103
Michigan	61.8	55.2	68.5	-6.6	6.7	89	111
New Jersey	44.2	42.9	49.1	-1.3	4.9	97	113
Florida	48.7	51.9	45.6	3.2	-3.1	106	93
Massachusetts	30.3	28.5	33.5	-1.8	3.2	94	110
Indiana	19.5	21.9	18.9	2.4	- .6	112	97
North Carolina	44.3	46.8	38.8	2.5	-5.5	106	88
12 Moderately Large States							
Missouri	28.2	29.8	25.7	1.6	-2.5	106	91
Virginia	34.4	36.2	31.3	1.8	-3.1	105	91
Georgia	44.4	44.7	38.5	.3	-5.9	100	86
Wisconsin	24.6	24.4	25.2	-.2	.6	99	102
Tennessee	36.1	37.8	32.3	1.7	-3.8	105	90
Maryland	25.2	26.1	25.7	.9	.5	104	102
Minnesota	24.0	25.4	24.0	1.4	—	106	100
Louisiana	48.5	48.6	45.2	.1	-3.3	100	93
Alabama	40.8	40.5	35.7	-.3	-5.1	99	88
Washington	17.7	18.9	19.9	1.2	2.2	107	112
Kentucky	30.0	32.7	29.0	2.7	-1.0	108	96
Connecticut	12.9	13.3	13.7	.4	.8	103	106
14 Moderately Small States							
Iowa	13.8	15.6	14.0	1.8	.2	113	102
South Carolina	31.0	30.4	28.0	- .6	-3.0	98	90
Oklahoma	17.7	18.6	17.4	.9	- .3	105	99
Kansas	12.6	13.1	12.2	.5	- .4	104	96
Mississippi	37.3	38.1	35.9	.8	-1.4	102	96
Colorado	14.3	14.0	13.0	- .3	-1.3	98	91
Oregon	13.6	14.6	14.5	1.0	.9	107	106
Arkansas	23.1	25.0	22.6	1.9	- .5	108	98
Arizona	13.1	13.3	11.5	.2	-1.6	102	88
West Virginia	16.4	17.3	16.4	.9	—	105	100
Nebraska	8.9	10.1	8.8	1.2	- .1	113	99
Utah	5.0	4.9	4.9	- .1	- .1	98	97
New Mexico	12.7	12.9	11.7	.2	-1.0	101	92
Maine	5.5	6.0	5.0	.5	- .5	109	91
13 Smallest States							
Rhode Island	6.4	6.1	7.2	- .3	.8	96	113
Hawaii	5.0	4.4	5.1	- .6	.1	88	102
New Hampshire	2.8	3.0	3.1	.2	.3	107	108
Idaho	3.5	3.7	3.3	.2	- .2	105	92
Montana	4.5	4.6	4.2	.1	- .3	104	95
South Dakota	5.0	5.4	5.5	.4	.5	107	109
North Dakota	4.5	5.2	4.1	.7	- .4	114	90
Delaware	4.2	3.5	3.0	- .7	-1.2	83	73
Nevada	1.9	1.9	1.8	—	- .1	101	94
Vermont	2.9	2.7	2.7	- .2	- .2	93	94
Wyoming	1.8	1.9	1.7	.1	- .1	103	96
Alaska	2.3	2.2	2.6	- .1	.3	92	112
Washington, D.C.	9.8	10.3	11.1	.5	1.3	105	112

SOURCE: Special tabulations prepared by the National Center for Education Statistics.

a/ 50 percent of 1969 U.S. median family income as indicated by the 1970 Census.
b/ Weighted average poverty threshold for nonfarm four-person family in 1969.

Table 5. Title I Funds To Be Received by Each State in 1975 Using Current Allocation Formula and Alternative Estimates of Children in Poverty

(Millions of dollars; assumes a total allocation of $1.5 billion, without floor)

State	Current Allocation Formula Using 1969 Estimates of Children in Poverty (1)	Current Allocation Formula Using 1973 Estimates of Children in Poverty		Ratio	
		READ Estimates (2)	Census Bureau Estimates (3)	2/1 (4)	3/1 (5)
12 Largest States					
California	$ 128.0	$ 139.3	$ 146.2	109%	114%
New York	173.3	194.4	181.5	112	105
Pennsylvania	78.7	76.3	78.4	97	100
Texas	93.3	101.1	88.9	108	95
Illinois	82.4	77.0	90.0	93	109
Ohio	48.5	50.2	49.5	104	102
Michigan	61.8	62.6	68.3	101	111
New Jersey	44.2	54.1	54.0	122	122
Florida	48.7	47.8	51.0	98	105
Massachusetts	30.3	34.3	34.6	113	114
Indiana	19.5	22.3	20.9	114	107
North Carolina	44.3	39.7	40.2	90	91
12 Moderately Large States					
Missouri	28.2	25.8	27.5	91	98
Virginia	34.4	29.3	33.2	85	97
Georgia	44.4	37.3	40.2	89	90
Wisconsin	24.6	24.4	25.2	99	103
Tennessee	36.1	31.3	31.0	87	86
Maryland	25.2	29.4	28.8	117	114
Minnesota	24.0	20.9	24.1	87	100
Louisiana	48.5	48.6	41.1	99	85
Alabama	40.8	41.6	32.7	102	80
Washington	17.7	17.5	20.5	99	116
Kentucky	30.0	29.4	26.2	97	87
Connecticut	12.9	17.2	17.2	133	134
14 Moderately Small States					
Iowa	13.8	9.7	11.9	71	87
South Carolina	31.0	22.8	25.7	78	83
Oklahoma	17.7	16.6	16.7	94	94
Kansas	12.6	10.1	10.2	80	86
Mississippi	37.3	31.0	30.7	83	82
Colorado	14.3	13.2	13.8	92	97
Oregon	13.6	13.4	13.1	98	96
Arkansas	23.1	16.3	19.1	71	83
Arizona	13.1	14.9	14.1	114	107
West Virginia	16.4	14.4	12.7	88	78
Nebraska	8.9	7.5	7.2	84	80
Utah	5.0	4.0	4.0	79	80
New Mexico	12.7	11.4	10.4	90	82
Maine	5.5	8.3	5.1	152	92
13 Smallest States					
Rhode Island	6.4	4.7	6.3	74	99
Hawaii	5.0	4.2	5.1	84	102
New Hampshire	2.8	4.5	3.0	158	107
Idaho	3.5	5.2	3.2	146	90
Montana	4.5	4.1	3.9	93	86
South Dakota	5.0	4.8	4.1	95	81
North Dakota	4.5	2.4	2.9	52	64
Delaware	4.2	4.7	4.4	114	105
Nevada	1.9	1.0	2.6	54	137
Vermont	2.9	3.0	2.8	104	95
Wyoming	1.8	3.9	2.0	218	109
Alaska	2.3	3.6	3.7	152	158
Washington, D.C.	9.8	8.6	9.6	87	97

SOURCE: Special tabulations prepared by the National Center for Education Statistics.

Although there are some differences between the Census Bureau and the READ estimates, both sets of data support this conclusion. This change undoubtedly reflects the fact that the slow economic growth experienced in the United States between 1969 and 1973 had a much greater negative impact on the large industrial states than it had on the smaller ones. As a result, relatively more of the nation's poor children in 1973 were located in the large states than was the case in 1969.

There is no logical basis for retaining the 1970 Census count of children in poverty in the allocation formula. This procedure was used because it was not considered likely that up-to-date county estimates of children in poverty would be available. The data in Table 5 suggest that if more recent data were available, the Title I funds received by most of the larger states would increase considerably.

Focusing attention on the census estimates for the 12 largest states in Table 5, we find that two states would receive reductions in funds if the current estimates of children in poverty were used (Texas and North Carolina), one state would have no change (Pennsylvania), one state would have a small increase (Ohio), and eight states would have increases ranging from 5 to 22 percent (Florida, New York, Indiana, Illinois, Michigan, Massachusetts, California, and New Jersey).

The picture is somewhat different among the 12 moderately large states, those with 3-5 million inhabitants. Among these states, we find only three with substantial gains in Title I funds if current estimates of children in poverty were used (Connecticut, Washington, and Maryland), and seven states with losses (Missouri, Virginia, Georgia, Kentucky, Tennessee, Louisiana, and Alabama).

One of the 14 moderately small states with 1-3 million inhabitants (Arizona) would gain in Title I funds if the current estimates of children in poverty were used. Each of the other states in this group would lose funds. The losses would be less than 10 percent in Oklahoma, Colorado, Oregon, and Maine; between 10 and 20 percent in Iowa, South Carolina, Kansas, Mississippi, Arkansas, Nebraska, Utah, and New Mexico; and greater than 20 percent in West Virginia.

The estimates shown in Table 5 for the 13 smallest states are considered too weak to be analyzed meaningfully because of the very small size of the CPS sample in those states. Reasonably reliable estimates for these states will not be available until after the Survey of Income and Education is completed in 1976.

Impact of Changing the Authorization Formula

In contrast to the relatively minor changes that can be noted in most states if the poverty line is increased even by as much as 50 percent, very sharp changes can be noted in most states if the basic authorization formula itself is changed. Table 6 shows the change that would take place if the current authorization formula were replaced with

Table 6. Comparison of Title I Funds that Would Be Received under Alternative Allocation Procedures with the Amount that Would Be Currently Received

States	No Change in Poverty Definition; Change in Allocation Formula to Poverty Only a/	No Change in Allocation Formula; Increase in Poverty Line by: 25 percent	50 percent
12 Largest States			
California	91%	97%	95%
New York	61	88	83
Pennsylvania	76	104	111
Texas	132	105	104
Illinois	70	93	91
Ohio	111	110	120
Michigan	67	91	89
New Jersey	64	96	94
Florida	122	103	104
Massachusetts	76	97	99
Indiana	115	120	135
North Carolina	132	104	102
12 Moderately Large States			
Missouri	119	106	114
Virginia	119	108	107
Georgia	132	100	98
Wisconsin	83	107	116
Tennessee	138	101	101
Maryland	85	107	111
Minnesota	77	104	116
Louisiana	128	97	92
Alabama	132	97	92
Washington	83	98	101
Kentucky	131	103	100
Connecticut	77	102	104
14 Moderately Small States			
Iowa	101	112	131
South Carolina	133	100	92
Oklahoma	129	106	107
Kansas	108	106	113
Mississippi	133	97	88
Colorado	104	100	105
Oregon	82	98	106
Arkansas	132	100	95
Arizona	122	104	106
West Virginia	130	103	103
Nebraska	111	112	120
Utah	119	112	126
New Mexico	130	101	97
Maine	125	120	133
13 Smallest States			
Rhode Island	83	100	95
Hawaii	83	102	98
New Hampshire	103	124	124
Idaho	125	113	124
Montana	109	124	134
South Dakota	121	112	119
North Dakota	126	102	110
Delaware	85	117	117
Nevada	110	118	133
Vermont	93	106	120
Wyoming	95	126	143
Alaska	73	108	106
Washington, D.C.	76	96	90

SOURCE: Special tabulations prepared by the National Center for Education Statistics.

NOTE: Each column represents a ratio of the amount that would be received using the specified definition to the amount that would be received under the current definition.

a/ The numerator of the ratio shown in the column represents the amount each state would receive if the current poverty definition were used; but the allocation was based only on the number of poor children and not on the current formula. The denominator represents the amount each state could receive using the current definition of poverty and the current allocation formula.

a formula that authorized Title I funds solely on the basis of the number of children in poverty as reported in the 1970 Census. If such a change were made, most large industrial states would receive a sharp reduction in Title I funds and most smaller rural states would receive a sharp increase in such funds. This change is due largely to the elimination of current expenditures per pupil from the allocation formula. Using CEPP to determine funding tends to transfer funds from those states with large proportions of poor children to those that make relatively large expenditures per capita on education.

Among the 12 largest states, three would have reductions of 20 to 30 percent (Massachusetts, Pennsylvania, and Illinois); and three would have reductions of 30 to 40 percent (New York, Michigan, and New Jersey). The three states in this group that would gain the most are in the South: Florida, with a gain of 22 percent, and North Carolina and Texas, each with gains of 32 percent.

Changes of a similar magnitude would be found among the 12 moderately large states. The 7 southern states in this group would all have gains ranging from 20 to 40 percent, whereas 5 states (only one of which is in the south) would have substantial losses. Among the 12 moderately small states, all but Oregon would have an increase in funds. Among the 13 smallest states, about half would gain, and half would lose funds.

Of all the factors considered, it appears that the allocation formula itself, and particularly current expenditures per pupil, exerts the greatest impact on the allocation of Title I funds. The greatest change in the allocation of funds among states would take place if the funds were allotted on the basis of the number of children in poverty rather than according to the present formula. If the present formula is retained, an increase in the poverty line would have a relatively minor impact on the allocation of Title I funds; however, an updating of the number of children in poverty would appreciably increase the funds going to the larger states and would decrease those funds to the smaller states.

Joint Impact of Changing the Poverty Definition and Updating the Poverty Count

In the preceding sections, attention was focused on the impact of a change in the definition of poverty or an update in the count of poor children. We shall now examine the impact of a joint change in these variables. Table 7, Column 3, shows the Title I allotments to each state in 1975, assuming a 25 percent increase in the poverty line and using the 1973 estimated number of poor children. These figures are compared with the amounts each state would receive if the current formula were used with the 1969 estimate of poor children, and if the current formula were used with the 1973 estimate of poor children.

The change in both variables would, with some important exceptions, have the same impact as that previously described for updating of the

Table 7. Title I Funds to be Received by Each State in 1975 Using the 1973 Count of Children in Poverty and a 25 Percent Increase in the Poverty Line

(Millions of dollars; assumes a total allocation of $1.5 billion, without floor)

State	Current Formula Using 1969 Estimate of CIP a/ (1)	1973 Estimate of CIP: Current Formula (2)	1973 Estimate of CIP: Current Formula Using 125 Percent of Poverty Line (3)	Difference (2-1) (4)	Difference (3-1) (5)
12 Largest States					
California	$ 128.0	$ 139.3	$ 135.5	$ 11.3	$ 7.5
New York	171.3	[illegible]	[illegible]	[illegible]	[illegible]
Pennsylvania	78.7	76.3	83.3	-2.4	4.6
Texas	93.3	101.1	100.0	7.8	6.7
Illinois	82.4	77.0	70.8	-5.4	-11.6
Ohio	48.5	50.2	62.6	1.7	14.1
Michigan	61.8	62.6	61.6	.8	- .2
New Jersey	44.2	54.1	55.8	9.9	11.6
Florida	48.7	47.8	49.6	- .9	.9
Massachusetts	30.3	34.3	39.1	4.0	8.8
Indiana	19.5	22.3	27.8	2.8	8.3
North Carolina	44.3	39.7	38.8	-4.6	-5.5
12 Moderately Large States					
Missouri	28.2	25.8	28.4	-2.6	.2
Virginia	34.4	29.3	29.9	-5.1	-4.5
Georgia	44.4	37.3	36.2	-7.1	-8.2
Wisconsin	24.6	24.4	30.2	- .2	5.6
Tennessee	36.1	31.3	30.2	-4.8	-5.9
Maryland	25.2	29.4	35.0	4.2	9.8
Minnesota	24.0	20.9	21.9	-3.1	-2.1
Louisiana	48.5	48.4	44.2	.1	-4.3
Alabama	40.8	41.6	38.4	.8	-2.4
Washington	17.7	17.5	17.7	- .2	—
Kentucky	30.0	29.4	27.8	- .6	-2.2
Connecticut	12.9	17.2	18.9	4.3	6.0
14 Moderately Small States					
Iowa	13.8	9.7	11.5	-4.1	-2.3
South Carolina	31.0	22.8	21.8	-8.2	-9.2
Oklahoma	17.7	16.6	16.2	-1.1	-1.5
Kansas	12.6	10.1	11.6	-2.5	-1.0
Mississippi	37.3	31.0	26.4	-6.3	-10.9
Colorado	14.3	13.2	13.0	-1.1	-1.3
Oregon	13.6	13.4	8.6	- .2	-5.0
Arkansas	23.1	16.3	15.0	-6.8	-8.1
Arizona	13.1	14.9	16.3	1.8	3.2
West Virginia	16.4	14.4	13.8	-2.0	-2.6
Nebraska	8.9	7.5	9.3	-1.4	.4
Utah	5.0	4.0	4.7	-1.0	- .3
New Mexico	12.7	11.4	10.2	-1.3	-2.5
Maine	5.5	8.3	9.8	2.8	4.3
13 Smallest States					
Rhode Island	6.4	4.7	4.5	-1.7	-1.9
Hawaii	5.0	4.2	4.2	- .8	- .8
New Hampshire	2.8	4.5	5.3	1.7	2.5
Idaho	3.5	5.2	6.0	1.7	2.5
Montana	4.5	4.1	4.8	- .4	.3
South Dakota	5.0	4.8	5.2	- .2	.2
North Dakota	4.5	2.4	3.1	-2.1	-1.4
Delaware	4.2	4.7	5.5	.5	1.3
Nevada	1.9	1.0	.9	- .9	-1.0
Vermont	2.9	3.0	3.3	.1	.4
Wyoming	1.8	3.0	4.4	1.2	2.6
Alaska	2.3	3.6	3.4	1.3	1.1
Washington, D.C.	9.8	8.6	17.6	-1.2	7.8

SOURCE: Special tabulations prepared by the National Center for Education Statistics.

a/ CIP represents children in poverty.

poverty count alone. That is, there would be a transfer of funds from the small states to the large ones. Among the 12 largest states, eight would receive an increase in funds, the same number as that previously noted for a change in the poverty count alone. New York, an important exception, would have gained considerably from an update of the poverty count alone, but would lose slightly if both variables were changed at the same time. Illinois and North Carolina would also lose considerably if both variables were changed at the same time. The gains for the other large states were largely offset by declines in most of the 12 moderately large states and in nearly all of the moderately small states. On the other hand, most of the 13 states with less than one million inhabitants would gain as a result of this change; however, these changes are subject to large errors of estimation.

METHODOLOGY FOR PREPARING CURRENT ESTIMATES OF CHILDREN IN POVERTY FOR STATES AND COUNTIES

Two basically different procedures were used to prepare estimates of the number of children in poverty by state for 1973. One procedure, developed by the Bureau of the Census, is a regression technique using poverty statistics from the 1970 Census, the March 1974 Current Population Survey, and estimates of per capita income prepared by the Bureau of Economic Analysis (BEA) of the Department of Commerce for 1969 and 1973. The second procedure, developed by the Regional Economic Analysis Division (READ) of the Department of Commerce, is based on a matrix of families classified by size of family and income level for each state based on the 1970 Census, updated by current estimates of income distribution for each state prepared by BEA. Estimates of the proportion of children in poverty in 1973 based on both procedures are shown in Table 8 and estimates of the number of children in poverty are shown in Table 9.

There is very close agreement between the census and the READ estimates in the 12 largest states (those with 5 million or more people). The average difference for all of the states in this group is one percentage point. In seven of these states the estimates differ by less than one percentage point; and in three additional states, the difference is one to two percentage points.

There is very close agreement between the two estimates in the 12 moderately large states (those with 3-5 million people); however, the differences are considerably greater than those noted above. The average difference within this group is about two percentage points. In four of these states the estimates differ by less than one percentage point and in five additional states, the difference is one to two percentage points. This group, however, does contain two states (Alabama and Louisiana) with relatively great differences (four and six percentage points, respectively).

Differences of the same order of magnitude can be observed in the 14 moderately small states with 1-3 million inhabitants. Here again, the average difference is about two percentage points. In seven of these states, the difference is less than one percentage point and in three additional states the difference is one to two percentage points.

As might be expected, poorest agreement is found for the 13 smallest states with less than one million inhabitants. The average difference for these states is three and one-half percentage points. In this group there is only one state with less than one percentage point difference and only two states with a difference of one to two percentage points. Seven of the 13 states in this group have differences of three percent or more. Hopefully, the margin of error will be reduced for this group of states as work continues on the project. There is good reason to expect that this will be the case, particularly after the results of the Spring 1976 expanded CPS survey are available.

Table 8. Comparison of Census and READ Estimates of Percentage of Children 5-17 Years Old in Poverty, by State, 1973

State	READ	Census	Difference (Census-READ)
12 Largest States			
California	12.2	13.3	1.1
New York	13.5	12.6	-0.9
Pennsylvania	9.7	10.3	0.6
Texas	21.1	19.0	-2.1
Illinois	8.9	11.3	2.4
Ohio	9.9	10.0	0.1
Michigan	8.1	9.5	1.4
New Jersey	9.6	9.9	0.3
Florida	15.6	17.1	1.5
Massachusetts	8.9	9.3	0.4
Indiana	9.2	8.8	-0.4
North Carolina	19.1	19.8	0.7
12 Moderately Large States			
Missouri	12.7	14.0	1.3
Virginia	13.8	16.1	2.3
Georgia	19.0	20.9	1.9
Wisconsin	7.9	8.5	0.6
Tennessee	19.9	20.2	0.3
Maryland	11.5	11.5	0.0
Minnesota	7.1	8.7	1.6
Louisiana	28.8	25.1	-3.7
Alabama	29.0	23.3	-5.7
Washington	7.9	9.9	2.0
Kentucky	22.2	20.3	-1.9
Connecticut	8.6	8.9	0.3
14 Moderately Small States			
Iowa	6.3	8.1	1.8
South Carolina	19.9	23.1	3.2
Oklahoma	16.1	16.0	- .01
Kansas	9.5	10.6	1.1
Mississippi	31.5	32.1	0.6
Colorado	10.3	11.1	0.8
Oregon	9.5	9.4	-0.1
Arkansas	20.5	24.6	4.1
Arizona	15.9	15.3	-0.6
West Virginia	21.2	19.1	-2.1
Nebraska	10.4	10.2	-0.2
Utah	6.7	7.0	.03
New Mexico	22.7	21.2	-1.5
Maine	9.4	11.8	2.4
13 Smallest States			
Rhode Island	7.8	11.7	3.9
Hawaii	7.2	9.7	2.5
New Hampshire	11.6	7.4	-4.2
Idaho	15.2	9.3	-5.9
Montana	11.1	10.6	-0.5
South Dakota	15.7	13.2	-2.5
North Dakota	8.0	10.5	2.5
Delaware	13.3	12.4	-0.9
Nevada	3.5	9.8	6.3
Vermont	11.1	10.1	-1.0
Wyoming	20.2	9.9	-10.3
Alaska	13.5	14.6	1.1
Washington, D.C.	19.2	22.6	3.4

Table 9. Comparison of Census and READ Estimates of the Number of Children 5-17 Years Old in Poverty, by State, 1973 (Numbers in thousands)

State	READ	Census	Difference (Census-READ) Number	Percentage
12 Largest States				
California	594	647	53	8.2
New York	561	525	-36	-6.8
Pennsylvania	265	282	17	6.0
Texas	627	564	-63	-11.2
Illinois	239	305	66	21.6
Ohio	261	264	3	1.1
Michigan	189	222	33	14.9
New Jersey	169	174	5	2.9
Florida	274	300	26	8.7
Massachusetts	123	128	5	3.9
Indiana	121	116	-5	-4.3
North Carolina	245	254	9	3.5
12 Moderately Large States				
Missouri	143	157	14	8.9
Virginia	163	190	27	14.2
Georgia	231	255	24	9.4
Wisconsin	92	99	7	7.1
Tennessee	194	197	3	1.5
Maryland	118	118	0	-
Minnesota	71	87	16	18.4
Louisiana	289	252	-37	-14.7
Alabama	258	207	-51	-24.6
Washington	66	83	17	20.5
Kentucky	181	165	-16	-9.7
Connecticut	64	66	2	3.0
14 Moderately Small States				
Iowa	44	57	13	22.8
South Carolina	141	163	22	13.5
Oklahoma	100	103	3	2.9
Kansas	50	56	6	10.7
Mississippi	193	196	3	1.5
Colorado	63	68	5	7.4
Oregon	50	50	0	-
Arkansas	101	121	20	16.5
Arizona	86	83	-3	-3.6
West Virginia	88	77	-11	-14.2
Nebraska	39	38	-1	-2.6
Utah	21	22	1	4.5
New Mexico	70	65	-5	-7.7
Maine	50	30	-20	-66.7
13 Smallest States				
Rhode Island	17	25	8	32.0
Hawaii	15	20	5	25.0
New Hampshire	23	15	-8	-53.3
Idaho	31	19	-12	-63.2
Montana	21	20	-1	-5.0
South Dakota	27	23	-4	-17.4
North Dakota	13	17	4	23.5
Delaware	19	18	-1	-5.6
Nevada	5	14	-9	-64.3
Vermont	13	12	-1	-8.3
Wyoming	18	9	-9	-100.0
Alaska	13	14	1	7.1
Washington, D.C.	29	34	5	14.7

Census Bureau Estimates of Children in Poverty

The Census Bureau estimates are based on the weighted multiple regression of the CPS estimates of children in poverty (CIP) on five independent variables representing only three quantities: the 1970 Census figures on CIP for 1969, the BEA values for current per capita income (PCI) for each year and the BEA values of PCI for 1969. The use of the 1970 Census values for 1969 CIP allows current sample information to determine how the basic distribution of poverty has changed between states since the 1970 Census. The use of PCI for 1969 and the current year provides a measure of the change in average income for each state.

These three variables are converted into five independent variables to calculate the regression estimates: the 1970 Census figures are used as one independent variable and the two sets of BEA PCI data are each converted into two independent variables, one for states with below average incomes and the other for states with above average incomes. This refinement was introduced because it was found that in 1969 CIP decreased as per capita income increased for all states with incomes under $3700 (roughly the poverty threshold). For the higher income states, CIP did not change as per capita income increased. It was, therefore, felt that a more accurate relationship could be obtained by fitting a separate variable to each group of states.

Below is a regression equation for the relationships described above. In this equation, X_1 represents the 1970 Census data for CIP, X_2 represents the difference between the logarithms of the PCI's in 1969 for the median state and each state with an income above the median; X_3 represents the same variable for 1969 as X_2, but for states with incomes below the median income; X_4 and X_5 have the same meaning as X_2 and X_3 but are for 1973.

$$CIP = b_o + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5$$

The regression estimates based on the above formulation form the main component of the current estimates of CIP by state, prepared by the Bureau of the Census. The current estimate for a given state is a weighted average of the regression estimate and the original CPS estimate. The procedure used to combine the regression and sample estimates weights the regression estimate heavily if the anticipated bias of the regression estimate is small relative to the amount of variance in the original CPS sample estimate explained by the regression estimate. The weights, therefore, vary from state to state. The CPS estimate forms an important component of the current estimate only for New York and California; it makes a minor contribution to the estimates for other large states and a negligible contribution to the small states.

The model assumes that changes in the incidence of poverty are closely related to the changes in average income. If this assumption is not valid, the current estimates could be seriously biased. A very interesting and important test of this assumption was devised by the

Census Bureau staff. This test involves the preparation of regression estimates based on 1960 and 1970 Census figures on poverty and the BEA data for 1959 and 1969. Unfortunately, the 1960 Census figures for CIP were never tabulated by states. Data are available, however, showing the proportion of low-income families (LIF) by state in both 1959 and 1969; and data are also available for both LIF and CIP for 1959 and 1969 for the 100 largest SMSA's in 1960, classified according to the 1960 SMSA boundaries, along with BEA data corresponding to these boundaries as well.

Regression estimates were prepared using a poverty measure in 1969, a poverty measure in 1959, and four additional independent variables formed from the BEA data for these years. For SMSA's, the median value of the 100 SMSA BEA figures was used in place of the state median. The logarithm of income was used in all cases.

When the 1969 LIF for states was estimated using only the 1959 estimates of LIF, the proportion of variance explained was measured by an R^2 of .90. This figure was raised to .96 when the logarithms of the 1959 and 1969 PCI were added. The split of the PCI figures to reflect states above and below the median state income for each year further improved the fit, raising R^2 to .98.

When the 1969 LIF was estimated from the 1959 LIF for the 100 largest SMSA's, the proportion of variance explained was measured by an R^2 of .83. The same procedure used to estimate CIP for the 100 largest SMSA's yielded an R^2 of .78.

The experience with the 1959 and 1969 LIF figures for states indicates that linear transformation of the 1959 values is the most appropriate functional form to fit to the current data.

READ Estimates of Children in Poverty by State

The procedure used by READ to estimate the number of poor children by state for 1973 entails the following operations: (1) estimating the distribution of families according to income in 1973, (2) extending this information to a classification of families by both income and family size, (3) applying established poverty levels to the resulting matrix in order to estimate families in poverty, and (4) applying estimates of the average number of children per family in order to convert the estimates of impoverished families to estimates of impoverished children.

The first step in this process is to prepare for each state the necessary estimates to complete the sample table shown below. The methodology for performing this and subsequent operations is described below.

Desired Statistical Display: Each State, 1973

Income interval in 1973	Family Size in 1974						
	2	3	4	5	6	7+	Total
0-1000	--	--	--	--	--	--	--
1000-2000	--	--	--	--	--	--	--
2000-3000	--	--	--	--	--	--	--
3000-4000	--	--	--	--	--	--	--
4000-5000	--	--	--	--	--	--	--
5000-6000	--	--	--	--	--	--	--
6000-7000	--	--	--	--	--	--	--
7000-8000	--	--	--	--	--	--	--
8000-10000	--	--	--	--	--	--	--
over 10000	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--

Step 1. Distribution of Families According to Total Money Income Received in 1973 (the row totals for the state matrix)

A technique has been developed by BEA which permits the extrapolation of a region's 1970 Census data on family incomes to post-censal years, based on the region's current personal income estimated by BEA and an analysis of the region's historical disparities in the allocation of income growth. Census data for 1960 and 1970 are used to compute a region's cumulative income distributions and to provide estimates of average family income for the census years. With the growth in income, the cumulative distributions move to the right on the income scale. The amount by which this curve shifts is, in general, closely related to the amount of growth in average family income. In fact, if there are no disparities in income growth, the 1970 cumulative distribution could be derived directly by simply moving each point on the 1960 distribution to the right at the rate of growth in average family income during the decade.

Indexes of disparity in the allocation of income growth were computed for each of the percentile points on the cumulative income distribution. For example, suppose that the 30th percentile for a given state's cumulative income distributions was $4,000 according to 1960 census data and $6,500 in 1970 (i.e., 30 percent of the families had incomes less than $4,000 in income year 1959, while in 1969, 30 percent had incomes less than $6,500) and that average family income had increased 50 percent from $8,000 to $12,000. If the income level associated with the 30th percentile had increased at the same rate as average income, it would have increased by 50 percent, from $4,000 to $6,000. Since it actually increased to $6,500, the additional growth is considered in this work as being due to the disparity in the allocation of income growh. The index of disparity for the 30th

percentile, therefore, would be computed as 1.083 (the actual 1970 level divided by the "expected" 1970 level).

For purposes of estimating the 1973 distributions, the indexes for 1960-70 were assumed to represent a trend for the period 1970 to 1973. Since post-censal data on average family income by state were not available when the estimates were prepared, the rate of growth in per capita income was taken as a proxy measure of the rate of growth in average family income during 1970-73. Some bias is introduced through the use of this proxy since, nationally, it can be seen that per capita income grew more rapidly than average family income, and, hence, the extrapolation of the family income distributions, using the rate of growth in per capita income, generally yields an underestimate of the number of families in the lower income intervals.

Based on the procedures described above, estimated distributions of families by income levels were prepared for each state for 1973.

Step 2. Distribution of Families According to the Number of Family Members for 1974 (the column totals for the state matrix)

Estimates of the distribution of families by size of family for each state were prepared based on a tabulation of the March 1974 Current Population Survey. It is important to note that the CPS was not designed to provide such detailed estimates. The estimates for smaller states may be seriously deficient.

Step 3. Distribution of Families by Size of Family and Amount of Income Received in 1973 (the cells in the state matrix)

The data described in Steps 1 and 2 represent the row and column totals of a table presenting the cross classification of families, by income and size of family, for 1973. The next step requires the definition of the cells in this table. Again, the most recent information on the cell values is the 1970 Census. The cell values for 1973 were estimated by use of a dual allocation procedure.

Dual allocation is a numerical technique for "matrix balancing." Given a set of predetermined row and column totals, the cells are first adjusted in order to yield appropriate row totals. These results are then adjusted to yield appropriate column totals, which, in turn, are adjusted to yield appropriate row totals, and so on, iteratively. The adjustment factor declines on each successive iteration, and cell values converge to numbers yielding the predetermined column and row totals simultaneously.

Unfortunately, there is no theoretical basis on which this numerial technique is founded, and although it "works," it is difficult to place much credibility in the results, unless: (1) the cell totals yield sums which are initially fairly close to the predetermined column and row

totals, or (2) a change in a given column (row) total can be safely assumed to be uniformly distributed across all rows (columns).

Obviously, condition (1) is not met in this problem since the number of families in a given state (and income class) may have changed considerably between 1970 and 1973. Further, an analysis of the results of the initial dual allocation indicated that condition (2) also failed to prevail, primarily because a change in number of families in a given income interval is not uniformly distributed to all family sizes. Because this is particularly true for the lower income intervals, some refinement was dictated.

To this end, national CPS data were used in an effort to make a realistic adjustment to the states' 1970 cells prior to beginning the dual allocation. The procedure developed involves estimating each cell of the 1973 national table on the assumption that the 1970-73 percentage change in the cell total was a function of the percentage changes in: (1) the associated column total, (2) the associated row total, and (3) the total number of families.

These first approximations (estimated using only 1973 row and column totals and 1970 cells) were then compared to the national CPS-derived cell totals for 1973 to develop a measure of the bias associated with applying this technique to a given cell. The ratios of the actual 1973 cells in the national table to the approximations were then computed using the above formula. These ratios were used as adjustment factors in the final dual allocation procedure.

Step 4. Families In Poverty

Data on standard poverty thresholds applicable to the various family sizes were obtained from the Census Bureau. Straight-line interpolation was used to estimate the number of families in a given cell with incomes below the poverty line. The estimates were summed to the national level and a pro-rata adjustment to the CPS total families in poverty for the United States was made.

Step 5. Children Aged 5-17 In Impoverished Families

In order to estimate children in poverty, it is necessary to estimate the number of children per impoverished family for each family size group. The precise information needed is not available directly for either states or the nation and requires manipulation of a variety of related data and a number of assumptions.

Data in the CPS report, "Characteristics of the Low Income Population: 1973," allow for the computation of the average number of related children under 18 per family by size of family, for all families and for impoverished families, as shown in Table 10. The ratio of these two numbers was taken as a measure of the general incidence of children in impoverished families relative to total families. Data in the related

Table 10. Computation of the Number of Related Children Aged 5-17 per Impoverished Family: United States, 1974, by Size of Family

Family Size	Related 1/ Children Aged 0-17 Per Family	Related 1/ Children Aged 0-17 Per Impoverished Family	Ratio	Related 2/ Children Aged 6-17 Per Family	Related Children Aged 6-17 Per Impoverished family	Related Children Aged 5-17 Per impoverished family
2	.067	.303	4.52	.039	.176	.189
3	.757	1.337	1.77	.372	.658	.705
4	1.644	2.154	1.31	.986	1.292	1.385
5	2.525	3.035	1.20	1.829	2.195	2.352
6	3.346	3.913	1.17	2.592	3.033	3.250
7+	4.792	5.315	1.11	3.758	4.171	4.470

1/ Computed from: U.S. Bureau of the Census, Current Population Reports, Series P-60, No. 98 "Characteristics of the Low Income Population: 1973," U.S. Government Printing Office, Washington, D.C., 1975.

2/ Computed from: U.S. Bureau of the Census, Current Population Reports, Series P-20, No. 276 "Household and Family Characteristics, March 1974," U.S. Government Printing Office, Washington, D.C., 1975.

CPS report, "Household and Family Characteristics, March 1974," allow for the computation of the average number of related children ages 6-17 per family by size of family. The relative ratios for children aged 0-17 were then applied to these estimates to provide estimates of the average number of related children aged 6-17 per impoverished family, as shown in the fifth column of Table 10. Column 6 was derived simply by expanding column 5 by the ratio of children aged 5-17 to children aged 6-17 in the United States in 1974.

Two problems exist with respect to the data in the last column of Table 10: (1) it is specific for related children, whereas we need estimates of total children; and (2) it refers to data for the United States, and there is probably some variation among the states. In order to compute state-specific adjustments for these problems, CPS data on the number of related children aged 6-17 per family for 1970 (the 1970 equivalent of Table 10, column 4) were compiled and applied to the 1970 Census tabulations of families by size in each state. The resulting statistic was then compared to the 1970 Census count of total children aged 6-17 in the state. It is assumed that the resulting ratio accounts for variation among the states in both the general concentrations of children and the ratio of total children to related children.

A final adjustment to account for state-to-state variation in the ratio of 5-17 year olds to 6-17 year olds was also included, but as expected, this variation is negligible, and the adjustment could just as well have been eliminated.

The data in Table 10, column 6 were applied to the state estimates of families in poverty in 1973 and adjusted by the state correction

factors. The resulting estimates were allocated to the CPS estimate of total children aged 5-17 in poverty for the nation, in order to provide the estimates given in state tables. The allocation factor for impoverished children was 1.05 (i.e., the unallocated estimates were about five percent lower at the national level, according to the CPS summaries).

READ Estimates by County

County estimates of the number of children in poverty in 1973 were derived as a rather straightforward allocation of the state totals. Briefly, the methods used were as follows:

1. County population estimates for 1973 were extended to 1974 via the assumption that the population growth rate 1973 to 1974 was the same as that observed for 1972 to 1973.

2. These population figures were used to allocate the total families in the state. The straight allocation was then "corrected," using 1970 relationships of the county to the state. (A county with a relatively high average family size in 1970 was assumed to have a relatively high average size in 1974.)

3. The 1970 distribution of families, according to income, was extended to 1973, based on growth rates in per capita income. Indexes of disparity were not included in this extension.

4. The number of families with incomes less than $5,000 in each county was computed for 1973, and these totals were controlled to the state number of families in this category.

5. The number of families with income less than $5,000 was used as an allocator for the number of families in poverty in the state in 1973.

6. The number of familes with incomes less than $5,000 was also used as an allocator for the number of children in poverty, but with a correction factor derived from 1970 Census results. If a county had a relatively high (low) number of impoverished children in 1970, when compared to the number of families with incomes less than $3,900 (the approximate 1970 equivalent of $5,000 in 1973), this differential was also applied in 1973. This adjustment was substantial in many cases -- particularly in the smaller counties.

HISTORICAL BACKGROUND FOR TITLE I AUTHORIZATION FORMULA

The Elementary and Secondary Education Act was originally conceived by Congress as an antipoverty program designed to help poor people and poor school districts. The major instrument for achieving this objective was Title I of this Act. 2/

The clear intent of Title I was to distribute substantial Federal aid to school districts which were too poor to provide adequate educational programs on their own. 3/ To achieve this objective, Congress developed a formula for authorizing funds to counties. This formula defined the eligible population and the payment rate. In 1965, two groups were included in the eligible population: (1) all children in families with incomes under $2,000 in the 1960 Census; and (2) all children in families with AFDC payments of $2,000 or more. The payment rate was set at 50 percent of the state expenditure per pupil or 50 percent of the national average expenditure per pupil, whichever was higher. The following formula describes these Title I authorizations:

$$G_{ij} = .5\, D_i\, (P_{ij} + A_{ij})$$

Where:

- i : Suffix denoting state within U.S.
- j : Suffix denoting county within state
- A_{ij} : Children in families with AFDC payments of $2,000
- D_i : Per pupil expenditure for state i used in authorization
- G_{ij} : County authorization
- N : National per pupil expenditure
- P_{ij} : Children in families with income under $2,000 (1960 Census)
- Q_i : State per pupil expenditure

and $D_i = \text{Max}\,[N, Q_i]$

When the Title I formula was prepared in 1965 (and even at present) the decennial census was regarded as the best source for estimating the count of poor children in each county. This is the only source which provides income distributions for the entire population for small geographic areas throughout the country. The major shortcoming of these data is that they are available only at the beginning of each decade. If they are to be used for this purpose, therefore, a procedure must be

developed for updating them periodically. "That update," according to a congressional report prepared in 1974, "was written into the original law as the portion of the formula which counts AFDC children." 4/

If the cost of providing educational services were the same throughout the country, the count of poor children alone would have provided an adequate basis for allocating Title I funds to counties. These costs, however, do vary considerably. In the interest of equity, Congress decided to adjust the payments to reflect differences in the cost of providing educational services. The current expenditures per pupil (CEPP) in each state were used for this purpose. There is no explicit statement that Congress had this in mind when it adopted the use of CEPP in the allocation formula. This conclusion, however, can be inferred from the congressional report for 1974. In discussing a change in the payment rate, this report states that the revised rate (which was also based on CEPP) "reflects much more accurately the differences in providing compensatory education throughout the country." 5/ Presumably, therefore, both the original and the revised payment rates were intended to adjust Title I payments for differences in the cost of providing educational services.

After several years, Congress found that both key elements in the allocation formula -- the count of poor children and the payment rate -- were not working according to expectations. The count of children in AFDC families with grants above $2,000 proved to be a very poor substitute for the actual count of all poor children in each school district. As a result of sharp increases in AFDC payments and mushrooming caseloads, the number of AFDC children counted under the formula increased very rapidly, whereas the count of poor children based on the 1960 Census remained fixed. As a result, the AFDC component of the eligible population increased from 10 percent of the total in 1966 to over 60 percent in 1974. 6/ These changes did not occur uniformly throughout the country. AFDC payments tend to be highest in the large, high-income, urban states and these states also contain most of the children in families with AFDC payments above $2,000. As a result, these states made the greatest gains in the number of eligible children to be counted under the formula. This fact shows up very clearly in Table 11. In 1965, for example, New York had 5.4 percent of all the children in the nation eligible to be counted under the Title I formula. By 1972 this proportion had more than doubled to 13.4 percent. Similar changes took place in California and New Jersey. The greatest relative losses in eligible population were in states with low AFDC payments. Most of these states are in the south where reductions of 50 percent in the eligible population were typical. After reviewing similar data, Congress concluded "Clearly, the present Title I formula, because of its great reliance on AFDC statistics, has become skewed heavily in favor of the wealthier states in the country. That result is completely contrary to one of the principal purposes of Title I: To provide assistance to school districts and states whose ability to operate adequate educational programs is impaired by concentrations of low-income families." 7/

Table 11. Number of Low Income Children under Original Grant Eligibility Standard, 1965-197
(Children in thousands)

State	Under $2,000 (1960 Census) (1)	AFDC Over $2,000 (1962) (2)	Total (3)	Percentage of National Total (4)	Under $2,000 (1970 Census) (5)	AFDC Over $2,000 (1971) (6)	Total (7)	Percent Nat'l Tot (8)
Alabama	242.5	0.0	242.5	4.4	96.0	1.1	97.1	1.7
Alaska	4.8	0.0	5.6	0.1	4.3	4.4	8.7	0.2
Arizona	38.9	5.6	44.5	0.8	29.3	17.7	47.0	0.8
Arkansas	148.2	0.0	148.2	2.7	52.7	0.0	52.2	0.9
California	206.6	102.1	308.7	5.6	214.4	566.4	780.8	14.0
Colorado	33.6	7.3	40.9	0.7	25.4	32.5	57.9	1.0
Connecticut	20.7	7.6	28.3	0.5	22.2	42.3	64.5	1.2
Delaware	7.4	0.0	7.4	0.1	5.6	5.2	10.8	0.2
Dist. of Col.	14.9	5.9	20.0	0.4	13.1	30.6	43.7	0.8
Florida	142.5	0.0	142.5	2.6	100.7	19.3	120.0	2.2
Georgia	239.0	0.0	239.0	4.3	93.1	0.0	93.1	1.7
Hawaii	8.8	2.4	11.2	0.2	7.2	11.4	18.6	0.3
Idaho	12.3	2.4	14.7	0.3	7.4	5.6	13.0	0.2
Illinois	147.5	82.5	230.0	4.2	103.8	211.3	315.1	5.7
Indiana	76.4	3.5	79.9	1.4	61.8	11.8	73.6	1.3
Iowa	71.8	9.3	81.1	1.5	22.5	27.3	49.8	0.9
Kansas	40.3	5.4	45.7	0.8	22.1	27.9	50.0	0.9
Kentucky	193.6	0.0	193.6	3.5	68.8	29.5	98.3	1.8
Louisiana	201.1	0.2	201.3	3.6	114.6	12.0	126.6	2.3
Maine	18.4	2.7	21.1	0.4	10.1	17.3	27.4	0.5
Maryland	53.7	9.4	63.1	1.1	43.1	53.9	97.0	1.7
Massachusetts	47.1	16.8	63.9	1.2	61.7	104.8	166.5	2.6
Michigan	124.7	21.0	145.7	2.6	83.7	148.8	232.5	4.2
Minnesota	77.3	11.7	89.0	1.6	31.9	39.6	71.5	1.3
Mississippi	254.9	0.0	254.9	4.6	98.7	0.0	98.7	1.8

f Low Income Children under Original Grant Eligibility Standard, 1965-1972
(Children in thousands)

)	AFDC Over $2,000 (1962) (2)	Total (3)	Percentage of National Total (4)	Under $2,000 (1970 Census) (5)	AFDC Over $2,000 (1971) (6)	Total (7)	Percentage of National Total (8)
	0.0	242.5	4.4	96.0	1.1	97.1	1.7
	0.8	5.6	0.1	4.3	4.4	8.7	0.2
	5.6	44.5	0.8	29.3	17.7	47.0	0.8
	0.0	148.2	2.7	52.2	0.0	52.2	0.9
	102.1	308.7	5.6	214.4	566.4	780.8	14.0
	7.3	40.9	0.7	25.4	32.5	57.9	1.0
	7.6	28.3	0.5	22.2	42.3	64.5	1.2
	0.0	7.4	0.1	5.6	5.2	10.8	0.2
	5.9	20.8	0.4	13.1	30.6	43.7	0.8
	0.0	142.5	2.6	100.7	19.3	120.0	2.2
	0.0	239.8	4.3	93.1	0.0	93.1	1.7
	2.4	11.2	0.2	7.2	11.4	18.6	0.3
	2.4	14.7	0.3	7.4	5.6	13.0	0.2
	82.5	230.0	4.2	103.8	211.3	315.1	5.7
	3.5	79.9	1.4	41.8	31.8	73.6	1.3
	9.3	81.1	1.5	22.5	27.3	49.8	0.9
	5.4	45.7	0.8	22.1	27.9	50.0	0.9
	0.0	193.6	3.5	68.8	29.5	98.3	1.8
	0.2	201.3	3.6	114.6	12.0	126.6	2.3
	2.7	21.1	0.4	10.1	17.3	27.4	0.5
	9.4	63.1	1.1	43.1	53.9	97.0	1.7
	16.8	63.9	1.2	41.7	104.8	146.5	2.6
	21.0	145.7	2.6	83.7	148.8	232.5	4.2
	11.7	89.0	1.6	31.9	39.6	71.5	1.3
	0.0	254.9	4.6	98.7	0.0	98.7	1.8

Table 11. (Continued)

State	Under $2,000 (1960 Census) (1)	AFDC Over $2,000 (1962) (2)	Total (3)	Percentage of National Total (4)	Under $2,000 (1970 Census) (5)	AFDC Over $2,000 (1971) (6)	Total (7)	Percentage National Total (8)
Missouri	125.2	11.3	136.5	2.5	59.2	35.4	94.6	1.7
Montana	14.1	1.5	15.6	0.3	8.2	5.6	13.8	0.2
Nebraska	34.4	0.7	35.1	0.6	15.8	14.5	30.3	0.5
Nevada	3.2	0.7	3.9	0.1	4.0	2.4	6.4	0.1
New Hampshire	5.9	1.1	7.0	0.1	4.5	5.4	9.9	0.2
New Jersey	59.8	25.5	85.3	1.5	57.7	165.9	223.6	4.0
New Mexico	37.6	4.3	41.9	0.8	27.9	15.2	43.1	0.8
New York	200.1	99.9	300.0	5.4	194.6	553.3	747.9	13.4
North Carolina	323.1	3.5	326.6	5.9	99.2	24.4	123.6	2.2
North Dakota	23.3	1.8	25.1	0.5	8.1	4.8	12.9	0.2
Ohio	151.9	25.5	177.4	3.2	104.1	113.4	217.5	3.9
Oklahoma	84.8	11.2	95.9	1.7	37.3	28.8	66.1	1.2
Oregon	23.9	6.3	30.2	0.5	19.6	27.7	47.3	0.8
Pennsylvania	175.4	60.3	235.7	4.3	102.0	223.2	325.2	5.8
Rhode Island	12.1	4.0	16.1	0.3	8.8	17.0	25.8	0.5
South Carolina	206.6	0.0	206.6	3.7	71.8	21.9	93.7	1.7
South Dakota	30.7	1.5	32.2	0.6	10.8	7.1	17.9	0.3
Tennessee	220.0	0.0	220.0	4.0	81.8	0.0	81.8	1.5
Texas	398.2	0.0	398.2	7.2	192.6	65.3	257.9	4.6
Utah	11.7	2.1	13.8	0.2	9.6	11.6	21.2	0.4
Vermont	7.2	0.6	7.8	0.1	3.5	5.8	9.3	0.2
Virginia	167.9	3.1	171.0	3.1	67.8	43.0	110.8	2.0
Washington	33.1	9.9	42.9	0.8	29.7	37.1	66.8	1.2
West Virginia	106.4	0.1	106.5	1.9	35.5	14.7	50.2	0.9
Wisconsin	58.4	10.4	68.9	1.2	34.6	35.4	70.0	1.3
Wyoming	5.4	0.7	6.1	0.1	3.3	1.8	5.1	0.1
Total	4,948.1	582.6	5,530.7	100.0	2,645.8	2,921.6	5,567.4	100.0

NOTE: Because of rounding, detail may not add to totals.

SOURCE: Alan L. Ginsburg and Charles Cooke, "Education's Need for Small-Area Income Data with Reference to Title I, ESEA:" Business Uses of Small Area Statistics and Education's Needs and Methods for Estimating Low-Income Population, Small Area Statistics Papers, U.S. Bureau of the Census, June 1976.

Table 11. (Continued)

...0 ...s)	AFDC Over $2,000 (1962) (2)	Total (3)	Percentage of National Total (4)	Under $2,000 (1970 Census) (5)	AFDC Over $2,000 (1971) (6)	Total (7)	Percentage of National Total (8)
	11.3	136.5	2.5	59.2	35.4	98.6	1.7
	1.5	15.6	0.3	8.2	5.6	13.8	0.2
	0.7	35.1	0.6	15.8	14.5	30.3	0.5
	0.7	3.9	0.1	4.0	2.4	6.4	0.1
	1.1	7.0	0.1	4.5	5.4	9.9	0.2
	25.5	85.3	1.5	57.7	165.9	223.6	4.0
	4.3	41.9	0.8	27.9	15.2	43.1	0.8
	99.9	300.0	5.4	194.6	553.3	747.9	13.4
	3.5	326.6	5.9	99.2	24.4	123.6	2.2
	1.8	25.1	0.5	8.1	4.8	12.9	0.2
	25.5	177.4	3.2	104.1	113.4	217.5	3.9
	11.2	95.9	1.7	37.3	28.8	66.1	1.2
	6.3	30.2	0.5	19.6	27.7	47.3	0.8
	60.3	235.7	4.3	102.0	223.2	325.2	5.8
	4.0	16.1	0.3	8.8	17.0	25.8	0.5
	0.0	206.6	3.7	71.8	21.9	93.7	1.7
	1.5	32.2	0.6	10.8	7.1	17.9	0.3
	0.0	220.0	4.0	81.8	0.0	81.8	1.5
	0.0	398.2	7.2	192.6	65.3	257.9	4.6
	2.1	13.8	0.2	9.6	11.6	21.2	0.4
	0.6	7.8	0.1	3.5	5.8	9.3	0.2
	3.1	171.0	3.1	67.8	43.0	110.8	2.0
	9.9	42.9	0.8	29.7	37.1	66.8	1.2
	0.1	106.5	1.9	35.5	14.7	50.2	0.9
	10.4	68.9	1.2	34.6	35.4	70.0	1.3
	0.7	6.1	0.1	3.3	1.8	5.1	0.1
	582.6	5,530.7	100.0	2,645.8	2,921.6	5,567.4	100.0

... may not add to totals.

... Charles Cooke, "Education's Need for Small-Area Income ...o Title I, ESEA:" Business Uses of Small Area Statistics and ... Methods for Estimating Low-Income Population, Small Area ...S. Bureau of the Census, June 1976.

As noted above, in the interest of equity, Congress decided to adjust the payments to each state to reflect differences in the cost of providing education. Under the formula adopted in 1965, counties were eligible to receive either one-half of the state or national average expenditure per pupil, whichever was higher for each state. Although the national average was used as the minimum payment rate, no upper limit was set on the amount each county could receive. After several years of operation, Congress decided that this aspect of the formula "also contributed to a distortion in the distribution of Title I funds among states." 8/ Particularly onerous was the large amount received by New York under this formula. The congressional report for 1974 points out that New York was eligible to receive $772 per child as compared to $465 per child for California and it concludes that "there are few who would contend that it costs that much less to live in California than it does in a similar area in New York." 9/ As a result, Congress decided to change the payment rate in such a way as to bring the payment rate among states closer to the national average.

In 1972 the present authorization formula was adopted after considerable debate. An attempt was made to correct some of the more important defects in the earlier formula; but, the basic allocation procedure remained much the same.

FOOTNOTES

1. The measure of poverty used in the authorization formula was originally developed by Mollie Orshansky of the Social Security Administration in 1964. The measure is built around the Department of Agriculture's economy food plan of 1961 and the national average ratio of family food expenditures to total family after-tax income as measured in the 1955 Household Food Consumption Survey. The measure consists of 124 separate poverty cutoffs differentiating families by size, number of children, age and sex of head, and farm or nonfarm residence.

2. "Title I can be considered as another very potent instrument to be used in the eradication of poverty and its effects. Under Title I of this legislation the schools will become a vital factor in breaking the poverty cycle by providing full educational opportunity to every child regardless of economic background. The major thrust of this legislation is contained in Title I where it is proposed that approximately $1.06 billion be provided to local school districts for the purpose of broadening and strengthening public school programs in the schools where there are concentrations of educationally disadvantaged children." House of Representatives, Elementary and Secondary Education Act of 1965, Report Number 146, 89th Congress, 1st Session, April 6, 1965, p. 5.

3. House of Representatives, Elementary and Secondary Amendments of 1974, Report Number 93-805, 93rd Congress, 2nd Session, p. 5.

4. Ibid., p. 9.

5. Ibid., p. 13.

6. Ibid., p. 9.

7. Ibid., p. 11.

8. Ibid., p. 13.

9. Ibid., p. 13.

GPO 916-629